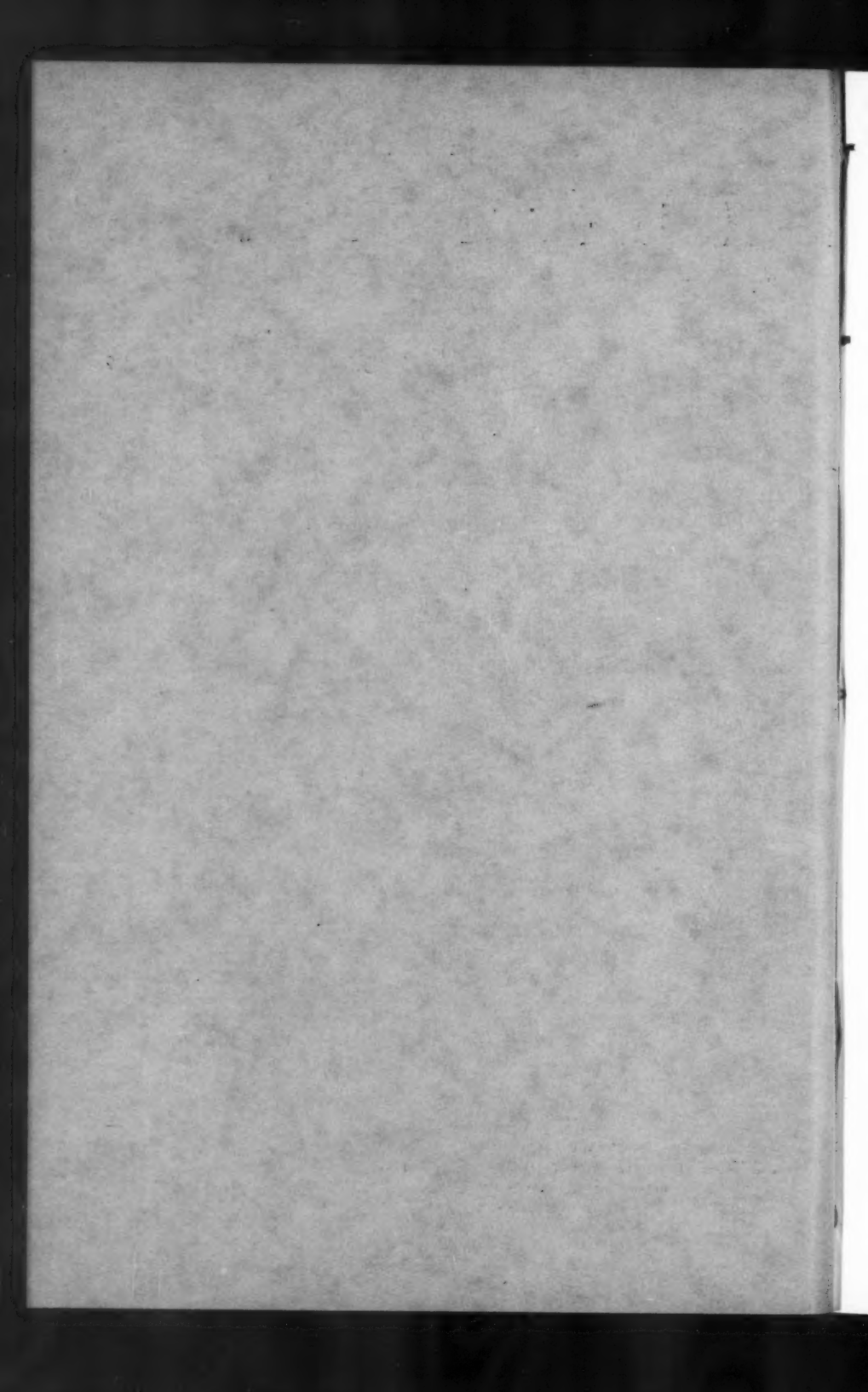

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L. R. B. & M. JOURNAL

VOLUME NINE

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NUMBER TWO

Accounts and Statistics

By SEYMOUR L. ANDREW

(Chief Statistician, American Telephone & Telegraph Co.)

Accounts and statistics—more and more these two terms are being associated in the business world. At the present rate, it won't be long before they become as inseparable as Damon and Pythias or the Haig brothers. For with the growth of large scale industrial, commercial and utility operations, accounting systems and methods must not only be designed to present to the management and owners true records of the financial transactions and status of business organizations, but they must also be adapted to yield as much statistical data as practicable for administrative purposes. More and more are the accounting departments of large enterprises outgrowing strictly auditing and accounting functions and are becoming responsible for the development and application of methods of statistical control of operations, at least in so far as these methods utilize the accounting records. This trend is well illustrated by the following statement recently made by the chief accounting officer of one of the great railroad systems of the country, referring to the duties of his accounting organization:

The Comptroller analyzes all phases of operation and furnishes unbiased data and opinions on any and all problems affecting the cost or results of operation . . . There is no avenue in the entire railroad world which he must not be ready to explore in a painstaking and complete manner so as to render valuable and impartial information on the many

complex questions arising in railroad operation.

"Accounts and statistics"—what do we mean by statistics when we use the term in this association? In presenting briefly my views in answer to this question, I shall not attempt to draw any fine line of demarcation between the field of accounting and the field of statistics in business enterprises. No useful purpose would be served by endeavoring to define the distinction between the two; and besides, it can't be done, at least with any high degree of satisfaction either to accountants or to statisticians. For purposes of the present narrative, I shall arbitrarily dispose of the question of whether accounting is a branch of statistics or statistics is a branch of accounting by agreeing, with minor mental reservations perhaps, with the conclusion of an experienced and practical accountant that in the modern accounting department "statistical work begins at the same point that accounting work begins, and accounting and statistics go hand in hand from wherever accounting begins to wherever statistics ends."

I think that, in the popular mind, statistics is frequently looked upon as a science—or trade—of recent development, which deals with uninteresting figures at its best and with involved mathematical concepts at its worst. The man in the street, I suspect, probably still regards a statistician as a

long-haired individual who knows to a farthing how many one-eyed Hungarians, between the ages of twenty and thirty, are employed in the cheese mines of Nevada.

In approaching the subject, therefore, I first want to point out that statistics has had a long and honored career. Indeed, the use of crude statistical methods runs back as far as recorded history; and probably the evolution of no subject has been more closely interwoven with the needs and development of peoples than has been the subject of statistics. From the earliest records of organized social and political communities, the enumeration and compilation of statistical data has played a vital and integral part in their existence. The apportionment of taxes and the organization of armies were practically impossible without some degree of statistical information regarding the resources in materials and manpower of the tribe or nation. One of the earliest known statistical compilations took place over 3,000 years before the birth of Christ, and concerned the collection of data regarding the wealth and population of Egypt for use in making arrangements for the construction of the Pyramids. And so on down through the succeeding centuries, crude statistics have been employed as aids in the administrative work of political rulers and governments.

But while statistics has had a long and distinguished career in the service of public administration and private scientific research, it is true that the application of statistical methods of analysis to business data is a development of recent origin. This is because business administration itself has only latterly taken on the aspects of a dis-

tinct science, with the process of evolution from small individual undertakings to large corporate organizations which has been coincident with the growth and improvement of transportation and communication. Moreover, the use of statistics in business has been greatly facilitated by the recent invention and manufacture of various kinds of labor-saving devices, mechanical in character, which have made it possible to undertake much statistical work which formerly was prohibitive, both from the standpoint of time and from the standpoint of cost. Again, the increase in legislation affecting business has also stimulated the expansion of statistical work in industry. As long as business in general was conducted by small units, each with a limited market, there was a tendency to regard statistics as an unnecessary luxury; but with the development of business as a science, I think it is clear that statistics and statistical work are not only permanently established as business necessities but are destined to play the same vital part in the progress of business administration as they have in the progress of other sciences.

When we try to define present-day statistics, we find it difficult to formulate a satisfactory definition because the scope of modern statistics is so broad. The definition, or rather description, which I think is perhaps most satisfactory is that given by Professor Chaddock of Columbia University in his recent book entitled "Principles and Methods of Statistics." Professor Chaddock says: "To most persons statistics are the masses of recorded measurements or countings—the columns of figures, the dry bones. This meaning of the term must be distinguished at once from that which

characterizes statistics as the body of methods and principles which governs the collection, analysis, comparison, presentation and interpretation of numerical data. The former refers to the raw materials with which the statistician works; the latter to the scientific methods of handling these materials. The one refers to the fact basis upon which conclusions rest, the other guards at every step the accuracy of the procedures by which the dry facts are clothed with interest and meaning, and by which sound conclusions are reached."

This description, it will be noted, clearly distinguishes between statistics as a body of raw data and statistics as a method of analysis. Certainly in the industry with which I am connected—and I believe in all progressive and well-managed business organizations—it is statistics as a method of analysis that we have in mind in associating statistics with accounts. With the introduction and development of scientific cost and administrative accounting systems in business organizations, there has usually become available a plenitude of raw data. The need is for the application to these raw data of methods of analysis and interpretation which will clothe them with interest and meaning and will make them tell to the management, clearly and concisely, whatever story they have to tell. Of statistics as a method of analysis, Professor Chaddock further says: "Statistics is a method of investigation which involves (1) exact measurements or quantitative estimates, (2) careful recording of results in classified form, (3) analytic scrutiny and treatment for purposes of comparison, and (4) judgment of the evidence and generalization from it where possible.

Statistical method involves the essentials of scientific procedure, emphasizing the attitude of mind which insists on basing conclusions upon facts accurately collected and properly classified, and on understanding the significance of relationships between groups of facts."

This quotation again expresses the sense in which we generally use the term "statistics" in business parlance; namely, that it is a method of collection, classification, tabulation and interpretation of facts which are usually in numerical form, but which are not necessarily in such form—with the accent very definitely on *interpretation*.

Reverting to less academic language, it would seem clear that, as a business organization grows in size and in complexity of operations, management must of necessity be based less and less upon facts obtained through personal experience and observation and more and more upon facts obtained through records and analyses. With continued growth of a business enterprise, the regular accounting reports naturally tend to become less and less adapted and adequate for administrative purposes. Frequently these reports become too voluminous or too comprehensive, with the result that busy executives do not have the time—and often do not possess the necessary detailed knowledge—fully to digest or interpret them. Moreover, the basic accounting records seldom show long-time trends and generally do not directly reveal the significant relationships which are so important to full interpretation of results; while the traditional unadjusted comparison of results in one month with those in the preceding month and in the same month of the preceding year is likely

to be misleading, perhaps dangerously so, from an administrative standpoint.

Accordingly, when we speak of "accounts and statistics," we mean not only the function of recording, classifying and summarizing financial transactions into accurate over-all totals, but we also include the responsibility for the application of a process of statistical analysis and interpretation to the routine accounting records and reports; that is, a process of intelligently selecting, relating and presenting the *significant* facts so that the meaning of the figures and the conditions they reveal are clearly, concisely and forcefully presented for the information and action of executives. Under this conception, it is the function of the statistician, working in close association with the accountant, to reverse the accounting processes of summarization and to break down over-all totals into their component items and to scrutinize the behavior of each item to which any real significance is attached. Appropriate mechanism should be set up whereby all important accounting totals, sub-totals and component items can be under constant supervision to

the end that unfavorable movements can be promptly detected and suitable analyses made. Through the use of more or less technical statistical methods, trends indicated by accounting data must be studied, seasonal variations must be analyzed, the influence of external conditions upon the figures must be measured, and the effect of abnormal temporary fluctuations must be computed. Proper standards of performance and comparison must be set up, and methods of presentation studied. In short, it is the function of statistics to vitalize the accounting records in every practicable and significant way and to "clothe them with interest and meaning" for administrative purposes.

The conjunction of the terms "accounts and statistics," then, implies that the classification of financial transactions and the analysis of these transactions thus classified fundamentally constitute a single integrated process "from wherever accounting begins to wherever statistics ends." If this is true, can it not properly be said that accountants and business statisticians are engaged in a common profession, with a large field of mutual interest?

Liabilities of Stockholders

It is a general impression that stockholders of manufacturing and mercantile corporations have no personal liability for debts of the corporation, and that the worst that could happen to them in the event of the corporation getting into financial difficulties is that they may lose their investment therein. Stockholders of national banks are subject to assessment to make good losses of the bank up to an additional amount equal to the par value of the stock held. In some states stockhold-

ers of state banks and trust companies have a similar double liability. The general impression, however, is that in the case of corporations other than banking institutions this double liability does not exist. In many states this is doubtless the case. The following prepared for our firm by Lucien B. Carpenter, Esq., of the Philadelphia Bar indicates that under certain circumstances stockholders of Pennsylvania business corporations may be liable for certain debts of the corporation:

Stockholders of a corporation who have paid for their stock are not at common law or in equity liable for the corporate debts; they can be subjected to such liability only when it is imposed by the legislature in the Act of Incorporation: *O'Reilly vs. Bard*, 105 Pa. 569. See also sec. 24 of the Corporation Act of 1874, P.L. 73, 83, providing that "the officers and stockholders of corporations organized under or accepting the provisions of this act shall not be individually liable for the debts of said corporation otherwise than in this provided."

Section 14 of the Act of 1874, supra, as amended by the Act of 1876, P.L. 30, sec. 3, reads as follows: "The stockholders in each of said corporations shall be liable, in their individual capacity, to the amount of stock held by each of them, for all work or labour done to carry on the operations of each of said corporations." The personal liability of stockholders of manufacturing, mining, and other companies of the second class whose incorporation is provided for in sec. 2, paragraph XVIII, is governed by sec. 39, clause 11, which reads: "The stockholders of any and all corporations under this act, shall be personally liable for all sums of money due to labourers, clerks and operatives, for services rendered within six months before demand made upon the corporation, and its neglect or refusal to make payment."

The above quoted acts do not apply to the claims of contractors, although such claims are for wages paid to their workmen: *Stirling vs. Indiana Oil Co.*, 28 Pa. Dist., Rep. 725. The liability exists to the amount of the stock owned by each stockholder although the shares have been paid for in full: *Lane's Appeal*, 105 Pa. 49, 57.

This personal liability of stockholders can be enforced only in the manner provided by statute: *Spillane vs. Shirley*, 22 Pa. Dist., Rep. 319. Section 15 of the Act of 1874, supra, reads: "In any action or bill in equity, brought to enforce any liability under the provisions of this act, the plaintiff may include as defendants, any one or more of the stockholders of such corporation, claimed to be liable therefor; and if judgment be given in favour of the plaintiff for his claim, or any part thereof, and any one or more of the stockholders so made defendants, shall be found to be liable, judgments shall be given against him or them. The execution upon such judgment shall be first levied on the property of such corporation, if to be found

in the county where the chief business of the corporation is carried on, and in case such property, sufficient to satisfy the same, cannot be found in said county, the deficiency, or so much thereof as the stockholder or stockholders, defendants in such judgment, shall be liable to pay, shall be collected of the property of such stockholder or stockholders." The proper practice is to join the corporation and the individual stockholders as parties defendant in one suit: *Stirling vs. Indiana Oil Co.*, supra.

Section 15 of the Act of 1874 also provides for assignment of the judgment to a stockholder who is compelled to pay a judgment for a corporate debt, and gives him a right to enforce it against the corporation, and then, if unsuccessful, against the other solvent stockholders, in the proportion of their holdings, originally liable for the claim. A suit to enforce personal liability of stockholders must be brought, under the last clause of section 15, "within six months after such debt shall have become due."

Apparently, the section quoted above applies only to cases of liability arising under section 14: *Green vs. Whitehead*, 5 Pa. Dist., Rep. 612. The procedure to enforce the personal liability imposed upon stockholders of manufacturing, mining, and other companies of like nature by section 39, clause 11, is to be found in sections 41 and 42 of the Act of July 18, 1863, P.L. (1864) 1104, 1108: *Spillane vs. Shirley*, supra. These sections of the Act of 1863 were not repealed by the Act of 1874: *Miller Paper Co. vs. York Coated Paper Co.*, 34 Pa. Super. Ct. 315. Under that act the individual liability of officers and directors for corporate debts cannot be enforced until after judgment and execution have been issued against the corporation. If such execution is returned unsatisfied, the judgment creditor may file a bill in equity against the corporation and all persons who were stockholders therein at the time of the commencement of the suit in which the judgment was recovered, for the recovery of the sums for which the stockholders are personally liable. The bill must set forth the judgment and return of execution, and the ground on which it is expected to charge the stockholders personally: *Spillane vs. Shirley*, supra.

The personal liability of stockholders in banking corporations is not considered in this memorandum, since such corporations are usually regulated by particular statutory provisions.

Character—the Foundation of Successful Business*

By JOHN D. ROCKEFELLER, JR.

Fifty years ago, the great problem with which business was grappling was how to organize on a scale commensurate with the growing demands for service made by the ever increasing population. Now the gigantic corporate form of business, suspected and harassed during the years of its evolution, is accepted as not only useful but indispensable. Business also has turned its attention to the development of better relations between employer and employee and, while much remains to be done, marvelous progress has been made along that line.

Today the vital matter to which business must needs address itself is the re-emphasizing of character and of high standards of business ethics, for upon such a foundation only can business be permanently successful.

Of course other qualities besides character are also necessary—ability, persistence, industry, thrift—but character is indispensable. Some people confuse reputation with character. Reputation is what people think we are; character is what we really are. A good reputation for an individual or business concern is to be desired; far more so a character that is beyond question.

May I mention briefly four qualities which go to make up character. The first is integrity. We put our money in a bank with a sense of security because we believe in the integrity of those in charge. A man may speculate in the hope of making a lucky turn, but he invests his money in enterprises

conducted by men of known integrity. Integrity in business means a trade as good for one party as for the other. A man may get the better of you in a bargain once, but you continue to do business with those people only whom you know are looking out for your interests as well as their own.

In the second place, character implies obedience to law—irrespective of whether one likes the law, believes in it or is opposed to it. How well known to all of us are instances of law breaking like the following: Here is a woman who says, "I don't believe in the customs law. It is foolish and unwarranted. Therefore I feel perfectly justified in smuggling." With equal propriety says the footpad, "This law against highway robbery cramps my style and forces me to the unwelcome alternative of earning an honest living." And he holds up the next automobile that passes.

Another illustration of this same attitude is the feeling on the part of many people that the 18th amendment is an infringement of personal liberty and therefore its observance is purely optional. To my way of thinking it is absolutely on all fours with the cases cited above.

And again the same disregard for law sometimes shows itself in connection with the operations of business. There are a large and increasing number of laws regulating business. The great majority of them are undoubtedly wise and in the interest of the people. Some unnecessarily hamper and restrict business and do not serve the common good. Here, as in any of

* An address delivered during Collier's Radio Hour, reprinted by permission of the author.

these other instances of regrettably common lawlessness, one has respect for the man who seeks by every legitimate means to bring about the repeal of a law which he honestly thinks to be contrary to the public interest. But law is law, whether it affects personal liberty, social well-being or business; so long as it remains the law of the land it should be obeyed by individuals and by corporations. The alternative is anarchy.

A third requisite of character is clean living. With the changing point of view of modern times in regard to moral questions, one almost wonders whether there is any such thing as fixed moral standards. And yet, with all due allowance for legitimate differences of opinion, way down within us all we know that those things which keep us physically fit, mentally vigorous and spiritually sensitive make for clean living and fine character, while whatever tends to defile the "house beautiful" in which our spirit dwells, to dull the power of our minds, to lower our ideals, is unworthy.

In these days of unprecedented and widespread prosperity in our land, with self-indulgence growing, individual liberty too frequently becoming license, and will power weakened by the less virile conditions of life, there is serious need of re-emphasizing the underlying importance of clean living as a requisite of business success. The good mixer, the hail-fellow-well-met is an asset in any business, but when he feels it necessary to "go the pace," whether from personal inclination or ostensibly to maintain his business contacts, he becomes a distinct liability to his company, and a positive menace to its public standing and its morale, both of which are of basic importance. A new

emphasis of high ideals of personal living is greatly needed in business today, also, may I add, men with the courage to live up to their convictions.

The fourth and final quality which I would mention is singleness of purpose or loyalty. Nothing truer was ever said than that "no man can serve two masters." So obvious is this fact that it has been embodied in law, which forbids the receiving of a commission from both buyer and seller. Often, however, in so insidious a way is influence brought to bear to break down one's singleness of purpose that the approach is not easy to recognize.

One's value to an employer is in large measure dependent upon singleness of purpose. If in considering advice given or an opinion expressed one must always wonder whether it is disinterested or whether personal advantage enters in, its value is seriously discounted. To be worthy of the complete confidence of our associates, to know that they can put a hundred per cent reliance in the disinterestedness of the opinions which we express, is one of the finest things in life. No gain to be derived from undertaking to ride two horses at the same time can begin to equal the satisfaction thus realized.

These then are certain of the fundamental qualities that underlie character—integrity, obedience to law, clean living and singleness of purpose. Is there any one of them that can be omitted or ignored without hazarding continuing business success? It is true that money is often made by trickery and sharp practice, but successful business is not established on a foundation so shifting.

Regretfully must we admit that instances are not lacking of corporations and individuals who set themselves up

as superior to law, but when condemned, as they are sure to be, in the court of public opinion, even the most worldly minded is bound to ask himself, "Does it pay?," and to admit that no business can be permanently successful which is not law-abiding.

As for clean living, is it not obvious that that man stands the best chance of winning out in any sphere who is sound in body, alert of mind and fearless of heart? Singleness of purpose, the loyalty of those with whom we are associated, gives us confidence in our fellows and makes great enterprises and achievement possible.

But, someone says, the pressure of competition is so tremendous that it is not always practicable to maintain these standards, much as we may believe in them. I answer that no honest stockholder in any company wants profits derived from compromise with right, nor would he wittingly permit, much less expect, any act to be performed by anyone representing the company, from the president to the office boy, which he would not himself be willing to perform. This is a position which cannot be too strongly stated. It is a platform on which I have always stood like the rock of Gibraltar.

Every ambitious, self-respecting individual wants to make a living. That he should do, and as much more as his services to society justify. But in this money-mad age we do well to remind ourselves that after all the real purpose of our existence is not to make a living, but to make a life—a worthy, well-rounded and useful life. In the long run, therefore, anything that defeats that purpose is not worth the cost.

Each one of us to a certain degree holds in his hand the reputation of

his business associates. The man who renders efficient, cheerful service brings direct credit upon everyone connected with the company that employs him. Where an employe of whatever rank, fails to live up to the highest standards in his individual business life, he is bringing discredit upon his associates and his employers.

Truly it has been said that no man can live unto himself alone, our lives are too interdependent. It is because I believe so profoundly in these principles of business ethics and because I am so proud of what many companies are doing along these lines that I covet for business generally the best in personal character, in ideals, as well as in financial success.

She Qualified for the Job

"I once advertised for a stenographer," says John Miller Wyatt, "and six girls applied for the job. Two asked, 'What are the hours?' Two asked, 'What make typewriter do you use?' One asked, 'How many weeks vacation will I get?' The other wanted a job—and got it."

—*F. & H. News.*

Mike—"Why do thim false eyes be made of glass?"

Pat—"Shure an' how could they see thru thim if they wasn't?"

"I am afraid doctor," said a woman to a physician, "that my husband has some terrible mental affliction. Sometimes I talk to him for hours and then discover he hasn't heard a word I said."

"That isn't an affliction madam," was the weary reply. "That's a divine gift."

The L. R. B. & M. Journal

Published by Lybrand, Ross Bros. and Montgomery, for free distribution to members and employees of the firm.

The purpose of this journal is to communicate to every member of the staff and office plans and accomplishments of the firm; to provide a medium for the exchange of suggestions and ideas for improvements; to encourage and maintain a proper spirit of cooperation and interest and to help in the solution of common problems.

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An Acknowledgment

We wish to express a word of sincere appreciation to those who, although not members of the L. R. B. & M. organization, have placed us in their debt for contributions to the current issue of our JOURNAL.

The article on Accounts and Statistics was written specially for our JOURNAL. In it the author, who is chief statistician of the largest corporation in the world, presents in a most interesting way the relation of one to the other and the growing application of statistics in the business world. We can assure Mr. Andrew of an appreciable reading of his article by our organization.

The article on Character—the Foundation of Successful Business, presents an address recently made over the radio by Mr. John D. Rockefeller, Jr. The importance of character can never be emphasized too strongly, especially in the present day when an unprecedented prosperity—probably never before experienced by any people in the world's history—is at times thought to be weakening the moral fibre and stamina of America. Mr. Rockefeller speaks with especial authority on the relation of character to successful business because of the long association of the Rockefeller name in the public mind with successful business, and particularly because of the esteem which he has won for character, stability and consideration for his fellowmen. We were therefore glad to receive Mr. Rockefeller's permission to print his address in our JOURNAL so that those of our organization who did not hear the radio address may have this opportunity to read the wise counsel which it contained.

Friends Who Have Gone

Since the last previous issue of the L. R. B. & M. JOURNAL, three friends of our firm—men who were held in high regard by all of us who had known them—passed to “the undiscovered country from whose bourn no traveler returns.” A word of affectionate appreciation is, we believe, not amiss and we may well pause for a moment to make a note of the impress which they left on their time.

E. Pusey Passmore

The friendship of the older members of our firm with Mr. Passmore dated back many years. He was cashier of one of our earliest banking clients in Philadelphia, and the contact continued up to the time of his death—a period of almost thirty years.

The following excerpt from the dispatch in *The New York Times*, which told of his decease, tells concisely of his career:

Ellis Pusey Passmore, President of the Bank of North America and Trust Company,* the oldest banking institution in the country, and former Governor of the Federal Reserve Bank of Philadelphia, died at his home here today after an illness of several weeks. He was in his sixtieth year.

Besides being one of the most widely known bankers of the city, Mr. Passmore was a prominent clubman, having served twice as President of the Union League.

Born on a farm near Rising Sun, Md., Mr. Passmore began his financial career when he was “bound out” at the age of 15 to the National Bank of Rising Sun as clerk, office boy and janitor. His indenture papers required him to work the first year for \$100, the second for \$150, and the third for \$200.

With his meager savings and some bor-

rowed funds he was able, by the strictest economy, to attend Swarthmore College for a year. Then he obtained a cashier's position in another bank. Careful saving enabled him to return to Swarthmore and graduate in 1893. The honorary degree of Master of Arts was conferred on him by his alma mater in 1918.

After being successively with several Pennsylvania banks, he became Governor of the Federal Reserve Bank in 1918, and left it to become President of the Bank of North America on March 1, 1920. When that bank merged with the Commercial Trust Company three years later, he headed the new institution.

He was active in Liberty loan drives during the war, was a former President of the State Bankers' Association, Chairman of the Committee on Banking and Currency of the Philadelphia Chamber of Commerce and a member of the Board of Managers of Swarthmore College and Treasurer of the college. He also was a director in several companies.

General George W. Goethals

When in 1919 our New York office was called on to handle one of the largest single engagements which we had performed up to that time, one of the especial compensations which it brought us was the beginning of an acquaintance with General Goethals. The engagement was of a nature which required the combined services of engineers and accountants. General Goethals' engineering firm was in charge of the work and our part in it brought us into direct contact with him.

The General was an interesting study in human nature. His wonderful achievement at Panama, in the face of almost insuperable difficulties, caused one to think of him as a driver of men and “hard boiled.” Personal contact with him revealed an entirely different kind of man. While it was clear that he would press determinedly and persistently on to any goal toward which he was aiming, he was also considerate

* A historical account of this bank appeared in the January 1921, issue of the L. R. B. & M. JOURNAL.

of those associated with him in a common effort. It was easy to understand how he secured the enthusiastic devotion of the men who helped him dig the Panama Canal.

The following editorial from *The New York Times* entitled "A Conqueror Passes," depicted in a satisfying way the achievement and the qualities of General Goethals:

Engineer? General Goethals was more than that. With him passes a modern conqueror who changed the face of the earth for the benefit of civilization. For, to cut continents in twain, to convert a miasmatic jungle into a waterway of international importance, to build the Panama Canal in the face of a tremendous, disheartening slipping of the earth that often undid the patient digging of months—surely this is conquest.

In technical imagination and designing ability Goethals had his peers in some of the men who preceded him at the Isthmus and failed. He succeeded because he had not only their special knowledge and ability but something more, something inborn: a sense of organization and administration that amounted to genius and, above all, a gift of leadership which is indispensable in conquest and which carried him over obstacles with such seeming ease that he finished a marvel of engineering before the stipulated time. And that he had the gift is attested by the devotion with which he was served from the humblest wielder of pick and shovel to such able officers as Gorgas, Siebert and Gaillard in draining pestilential swamps, in coping with the unstable masses of Culebra, in piling up gigantic blocks of concrete in dams and locks.

Engineers will rank him with the immortals of their profession—with the two Brunels, whose names are identified with the London tubes and the "Great Eastern"; Eads, who spanned the Mississippi; Roebling, whose Brooklyn Bridge is still regarded as a masterpiece; Sir Benjamin Baker, whose genius found expression in the Firth of Forth Bridge and the Assuan Dam; Dodge, who laid the rails of the first transcontinental steam road, and deLesseps, who triumphed brilliantly at Suez only to fail at Panama.

If American ideals of freedom and equality of opportunity needed any justification, it

would be found in the career of a man of such attributes. Goethals was the product of free, democratic education. In the free public schools of Brooklyn and New York he received his elementary training, and in the New York Free Academy (now the College of the City of New York) and free West Point his higher cultural and technical education. His rise from errand boy to builder of the Panama Canal and Major General has in it that touch of romance which one associates both with democracy and with great engineering.

Frank R. Savidge

Our acquaintance with Mr. Savidge began in Philadelphia and continued in New York. He was counsel for several different clients of our firm and as he maintained law offices in both Philadelphia and New York, we had contact with him in both cities.

Mr. Savidge was a cultured and talented gentleman who was highly regarded in his profession and with whom it was a pleasure to confer regarding the business matters that brought us in contact with him. The following is an excerpt from an account which appeared in the Philadelphia *Evening Bulletin*:

Born in Hancock, Maryland, the son of a chaplain in the Civil War, Mr. Savidge studied law in the office of the late Benjamin Harris Brewster, United States Attorney General. He was awarded a degree of master of laws by the University of Pennsylvania Law School. He was chosen solicitor of Ridley Park, and was also solicitor for numerous corporations.

Mr. Savidge was the author of "The Law of Boroughs in Pennsylvania," and "Corporations in Pennsylvania." He was a Mason and a member of the Union League and the University Club.

If you don't think co-operation is necessary, observe what happens when one wheel comes off the wagon.

Automobile Service Station Inventory Control

By R. E. WARREN

(Cleveland Office)

"A dishonest employee can do anything with gasoline that he can with money except deposit it in a bank."

This statement, made by an official of a leading distributor of motor fuel and lubricants, explains why an effective accounting system, which makes possible an accurate control of inventory from the tank car to the consumer, represents in many cases the difference between success and failure for a company engaged in the retail distribution of gasoline and oil. Dishonest attendants or service station managers need not resort to the abstraction of cash to augment their incomes. They can trade gasoline and oil for meat, groceries, furniture and practically every known commodity. As long as the grocer, the baker and the candlestick maker use gasoline in their trucks, this motor fuel will continue to pass as a well nigh universally accepted medium of exchange.

This does not imply that service station managers are especially inclined to dishonesty. It does mean that the distributor who is careless in accounting for his inventory invites the same carelessness on the part of his managers, and carelessness is sometimes the first step towards dishonesty. Furthermore, unless the inventory of gasoline is accounted for daily, losses arising from leaking tanks and similar causes may go undetected until profits laboriously accumulated are drained away in a relatively short time.

Regardless of its other purposes, and they are many, an accounting sys-

tem for a distributor of gasoline and motor oils must first of all make possible an effective and constant control of merchandise inventory. From the time the gasoline and oils leave the tank cars, while they are in storage and in service station tanks until they are finally converted into cash, and the cash accounted for, they must be charged to someone who is responsible and accountable for their money value. This is true whether the distributor operates a large number of stations or only one station under his personal management. In the latter case, although the factor of dishonesty or carelessness on the part of others is eliminated, it is just as important that the shrinkage in inventory be known. Hence, although forms used may be varied to suit the size of the business, the accounting procedure is basically the same.

The variations in the requirements of different organizations and limitations of time and space render it impossible to attempt a chart of general ledger accounts that will prove universally satisfactory. In most cases the inventory of gasoline and oils can be recorded on the general ledger in two accounts, Warehouse Inventories and Service Station Inventories.

As gasoline is received in tank car lots, it is charged to the account of Warehouse Inventories. As it is delivered to Service Stations, it is credited to the Warehouse Inventories account and charged to the Service Station Inventories account. Merchan-

dise sold direct from warehouse stocks is, of course, credited thereto and charged to the vendee direct.

The records, therefore, pertaining to the stock of a distributor of gasoline and oil may be classified into warehouse reports, delivery reports and service station reports.

Warehouse Reports

The forms required for a proper control of the warehouse stocks are as follows:

- Purchase orders
- Transfer orders
- Sales orders
- Daily warehouse report
- Delivery order
- Drivers report

As stocks are purchased, a purchase order in duplicate should be prepared in the general office. This purchase order should set forth the item and quantity thereof and, if gasoline, the temperature at which purchased. The duplicate purchase order should be forwarded to the warehouse manager. When the stock is received, it should be checked to the purchase order. In the case of gasoline the gallonage should be checked as at the temperature at which purchased.

As the company's own service stations order stocks from the warehouse, a transfer order should be prepared in triplicate. One copy should be retained at the warehouse and two copies should be given to the delivery department. Of these two copies one is signed by the station manager receiving the stock and returned to the delivery department. A third copy is left at the service station.

As deliveries to customers are frequently made direct from warehouse stocks, particularly in the case of distributors who make "tank wagon" sales to service stations other than those owned, it is necessary to provide for a proper accounting for such sales. The sales order provides for this.

As orders are received from customers for deliveries direct from warehouse stocks, a sales order is prepared in triplicate. As a matter of convenience these orders can be prepared in two colors, one color being used for cash sales and one for credit sales. The original and duplicate are sent to the warehouse, the original being forwarded from there to the delivery department whose duty it is to secure the signature of the purchaser upon delivery of the goods if the sale is not for cash. The triplicate is retained in the accounting department and used as the basis for an invoice to the customer and if bound can be made to constitute a sales record.

Assuming the use of the above forms, the warehouse manager will have on hand at the close of the day purchase orders covering stocks received; sales orders covering stocks sold; and transfer orders covering stocks delivered to service station managers.

From these the daily warehouse report will be prepared, a suggested form for which is annexed:

The receipts reported on this form will be supported by purchase orders; the returns from customers by credit memoranda properly authorized; the sales by sales orders; and the transfers by transfer orders. The daily warehouse report and supporting forms should be filed chronologically in the accounting department.

DAILY WAREHOUSE REPORT

DATE 19... (Signed)

INVENTORY OF BULK STOCKS

Product	Tank No.	Ft.	In.	Gallons		High Test	Low Test	Kero-sene	Lub. Oils	Fuel Oil
	1				Opening Inventory					
	2				Receipts					
	3				Returned from Customers					
	4				Total to Account For					
	5				Sales					
	6				Transfers					
	7				Should Have on Hand					
	8				Actual Inventory					
	9				Gallons Over					
	10				Gallons Short					
	11				RETURNED FROM CUSTOMERS					
	12				NAME	Product	Gallons	Remarks		
	13									
	14									
	15									
	16				TANK CARS UNLOADED					
	17				Initials	No.	Product	Gallons	Remarks	
	18									
	19									
	20									
	21									
	22									
	23									
	24									
	25									
	26									
	27									
	28									
	29									
	30									

REMARKS:--

Delivery Orders

In the case of distributing organizations where deliveries are made by one tank truck, which is supervised by the warehouse manager, it is probable that no delivery order or driver's report will be required. However, where a large number of stations are operated or where a greater number of delivery trucks are used, the use of these forms is necessary, not only as a requisite of the accounting system, but in order to handle efficiently the delivery of stocks.

In the larger centers of population the efficient delivery of stocks and the accurate determination of relative costs of delivery as between various station sites, is an important factor in the success of the distributor. A discussion of delivery costs is not pertinent to the subject of inventory control and accordingly is not discussed here. This factor, however, makes the use of the delivery order and the driver's report imperative in cases where the volume of business requires the use of any number of trucks.

In most cases each driver has a definite route or routes. Each route is planned so that a truck can supply as many stations as possible from its capacity. As selling and transfer orders are received by the warehouse, they are assigned for delivery to the various drivers. In order to eliminate hauling less than a full tank, each driver's orders should be so grouped as to call for the delivery of the tank's capacity on each trip. In cases where it is impossible to deliver on one trip the entire tank's capacity on definite orders received, the warehouse manager or delivery manager, sometimes classed as traffic man, should secure

a transfer order for the excess gallonage which will enable the driver to deliver this quantity to one of the service stations on the route.

As soon as the tank capacity of a truck is covered by transfer or sales orders, a delivery order is prepared in duplicate. This order lists the various deliveries to be made on the trip and the amount of cash to be collected on other than credit sales. The original of this order together with one copy of the transfer and sales orders are given to the driver who initials the duplicate thereof, showing that he received the stock called for by the delivery order.

At the end of the day the driver prepares his daily report. This report is merely a summary of the various delivery orders.

The driver's report is supported by the sales orders duly signed by the purchasers and by transfer orders signed by station managers. The driver must turn the proceeds of cash sales in to the cashier together with his report.

Service Station Records

In outlining the service station records necessary to an adequate control of inventory, no consideration is given here to special features such as inventories of accessories, method of handling cash and the authorization of credit sales. The present article deals only with records that will assist in an effective control of inventories.

The service station forms necessary to such a control of inventory are:

- Tally of sales
- Charge slips
- Service station daily report.

A specimen form of tally sheet is

From these original records the attendant prepares his daily report.

As was noted with respect to the form suggested for the tally of sales, this form can be varied to provide for a report on all the various classes of merchandise sold.

This report is readily prepared from the various original records in the hands of the attendant. The opening inventory is carried forward from the previous report. The receipts are posted from the transfer orders and the credit sales from the sales orders. After deducting from the balance the quantities on hand, the attendant is responsible for the cash value of the remainder.

Many operators of service stations are of the opinion that the station attendant should be allowed no overage or shortage.

It will be noted that the above forms make no provision for recording the sale of coupon books or the redemption of coupons with merchandise. The whole question of coupons and the prevention of the use thereof by attendants to their own profit is too involved to be discussed here. A simple method of treating coupons is to record the sale of coupon books as the sale of any other item of inventory as far as the attendant's records are concerned. When this practice is followed coupons redeemed by the station attendant are treated as the equivalent of their cash value in his hands.

For accounting purposes, some distributors prefer to consider each noon as the close of a business day. Others follow the usual business practice of considering each calendar day as a business day. The former method is well suited to a company engaged in the business of distributing gasoline

and oil. In the first place, the station attendants or managers frequently work from noon until noon and it is often desirable to collect the cash from stations during the afternoon. More important, however, is the fact that the accounting department receives the warehouse and drivers' reports at noon or shortly thereafter and can devote the afternoon to the audit and entry of these reports. The station reports which are collected during the afternoon are received the following morning. This provides a logical division of accounting effort and the recording of transactions within twenty four hours after they are made.

Regardless of when the accounting day is closed, however, the accounting department receives the warehouse and drivers' reports shortly thereafter. The warehouse report should be audited by checking the total of purchase, sales and transfer orders and credit memoranda to the respective quantities shown on the report. The total of units sold and transferred should also be compared with the total units delivered as shown by the delivery orders which, as noted above, should bear the initials of the truck driver making the delivery.

The accounting department can then reduce the units sold and transferred to their respective money values and the total thereof can be credited to warehouse inventories. The corresponding charges are to Service Station Inventories and Cash or Accounts Receivable.

The individual sales and purchase orders are posted to the proper subsidiary records.

Fluctuations in the price of stocks may be handled in three ways. They can be adjusted for daily or monthly

SERVICE STATION DAILY REPORT

STATION No. _____

DATE _____

		Low Test	High Test	No. 1 Oil	No. 2 Oil	No. 1 Flush. Grease	No. 2 Grease
Opening Inventory	1						
Receipts (Add)	2						
Total to Account for	3						
Less Credit Sales	4						
Balance	5						
Gauge Stick Reading & Inv.	6						
* Cash Sales	7						
Over Short	8						

SUMMARY CASH SALES

PRODUCT	* Units	Unit Price	Amount
Low Test			
High Test			
No. 1 Oil			
No. 2 Oil			
Flushing No. 1 Grease			
No. 2 Grease			
Rack Jobs			
Miscellaneous:			
TOTAL CASH			

Received \$.....

Collector

or they may be ignored. Where there is a rapid turnover of stock it is probably practical to ignore the normal fluctuations. Where the turnover is slower or the fluctuations relatively large, the warehouse and service station inventories can be readily adjusted either monthly or daily.

Upon receipt of the service station reports from the collector, who should account to the cashier for the cash collected, the accounting department is in a position to complete the audit of the day's transactions.

The warehouse copies of transfer orders should be checked to the service station reports to see that all stock received has been accounted for by the various managers. Total credit sales made by each station should be compared with the total of the sales orders.

Discrepancies in any item should be immediately reported to the manager or station supervisor. Immediate investigation will not only tend to enhance the chances of locating the error but tends as well to impress the station attendants with the fact that absolute accuracy is expected in all reports.

In addition to the above forms and reports, the collector should file a daily report with the manager or station supervisor calling attention to such items as unusual overages or shortages, tardiness in the preparation of reports and other information regarding the various stations.

The system and various forms herein suggested may at first glance appear so involved as to be impractical or expensive. It should be kept in mind, however, that station attendants, warehousemen and truck drivers are not bookkeepers. The use of standard forms, which leave nothing to their

judgment as to what should or should not be recorded, tends to simplify their task.

It is true that the use of these forms and a complete daily audit of the various reports involves the expense of a clerical staff that is unnecessary if a careful control of stock is not maintained. It is equally true, however, that leading distributors of gasoline and oil have found that the expense of such a staff is far less than the losses suffered through lack of inventory control.

Furthermore, such a control and the information that can be gleaned from the records involved, can be made a constructive force for the increase of business along profitable lines. Comparative sales figures, delivery costs, and a comparison of the profits of various stations are the facts upon which the intelligent manager or station supervisor bases his plans for more profitable operations. The development of these facts is incidental to the use of the records suggested.

The Canny Scot Again

A Scotchman entered a downtown bank the other day and asked for a loan of \$5. On being asked what security he had to offer, he replied, "Twenty-five thousand dollars in Liberty Bonds."

The bank officer told him his demand was absurd, but the lad from the Land o' Cakes insisted and the transaction was completed. He deposited the bonds, signed a note for a year at 6% and saved exactly \$24.70 by doing so. A bank across the street had asked him \$25 a year for a safety deposit box for his bonds!

